



February 6, 2013

Deputy Secretary Jerry Meral
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David Nawi, Senior Advisor
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By e-mail to: BDCP.Comments@resources.ca.gov.

Re: Comments on Proposed BDCP Cost-Benefit Analysis Methodology

Dear Deputy Secretary Meral and Mr. Nawi,

Thank you for this opportunity to provide comments on the cost-benefit analysis that BDCP is undertaking to assess the potential costs and benefits of the program. As you know, we believe that such an analysis is central to BDCP's effort to design a cost-effective program that can be financed and implemented successfully. In general, we urge BDCP to refine the current approach to ensure that this analysis will be useful to state and federal agencies, to stakeholders and to the public. The following specific comments address both the January 23 PowerPoint presentation by Dr. Sunding and the related Architectural and Engineering Contracts Task Order dated October 22, 2012 and amended in December 2012.

The analysis should include a full range of alternatives, including the portfolio-based conceptual alternative. Our single most significant concern with this proposed methodology is that it appears not to include an analysis of alternatives. Clearly, analyzing a full range of potential alternatives can provide valuable information to assist BDCP in designing a final plan that can provide the most cost-effective benefits. Without such an analysis of alternatives, the cost-benefit analysis will provide little guidance regarding how best to improve the proposed project. In particular, we urge BDCP to analyze the potential costs and benefits of the portfolio-based conceptual alternative submitted to BDCP by a coalition of water agencies, business leaders and environmental groups on January 16, 2013.

Excluding an analysis of alternatives runs counter to explicit guidance provided by state and federal agencies. For example, the State Water Code, as amended by the Delta Reform Act, requires BDCP to analyze "a reasonable range of Delta conveyance alternatives, including through-Delta, dual conveyance, and isolated conveyance alternatives and including further capacity and design options" (Water Code §85320(b)(2)(B)). The portfolio-based approach is just such an alternative.

In addition, guidance for state agencies regarding the evaluation of alternatives is provided by DWR's *Economic Analysis Guidebook*, dated January, 2008.¹ This document includes Corps of Engineers guidance that the NED plan requires that "the net annual benefits for all of the alternatives being evaluated must be determined (Page 55)." The DWR guidance document includes the following additional statements:

"Economic and financial evaluation: This requires an evaluation of all economic costs for structural and non-structural alternatives (Page 8)."

"B/C (benefit/cost) ratios can be used to select a project from several alternatives (Page 27)."

The DWR guidance document also indicates that tools developed by the Corps of Engineers' Hydrologic Engineer Center are designed for "analyzing the potential monetary benefits and costs of water conservation alternatives (Page 49)." Clearly, DWR and the Corps have concluded that "non structural" and "water conservation" alternatives should be evaluated as a part of economic analyses of proposed water projects. The portfolio-based conceptual alternative includes just such a non-structural and water conservation based alternative.

The DWR guidance document further states that:

If a project enables a primary beneficiary to avoid implementing a more costly project, then the avoided costs of that alternative project can be used as the upper limit on benefits... For example, the development of a ground water recharge project by a community may allow it to forgo constructing a more expensive surface water importation project that would have been implemented if the recharge project were not constructed (Page 33).

The portfolio-based conceptual alternative incorporates this approach to reducing costs and increasing benefits. Specifically, the portfolio-based alternative suggests that investing in less expensive levee, storage, efficiency, recycling and other projects could reduce the need for a costly large Delta conveyance facility. An evaluation of these trade-offs in BDCP's economic analysis would be highly valuable.

The Task Order also indicates that this cost-benefit analysis may be incorporated into the EIR/EIS. Therefore, it is important that this analysis comply with federal guidance regarding the analysis of alternatives. For example, the federal *Proposed National Objectives, Principles and Standards for Water and Related Resources Implementation Studies*, dated December 3, 2009² state that, "(t)he identification and enumeration of potential national benefits and costs are crucial in determining the feasibility of alternatives and selecting plans." In addition, this document states that:

¹ Available at http://www.water.ca.gov/pubs/planning/economic_analysis_guidebook/econguidebook.pdf

² These draft federal "Principles and Guidelines" can be found at:
<http://www.whitehouse.gov/administration/eop/ceq/initiatives/PandG/>

Each alternative shall be evaluated for its effectiveness, completeness, acceptability, and efficiency in contributing to the National Objectives and each of the other study objectives in accordance with the following standards:

- (1) Evaluate the incremental effects of each alternative as the differences between the most likely future conditions with the alternative and the most likely without-plan future conditions (the No Action alternative);
- (2) To the extent practicable, quantify benefits and costs and express them in monetary terms and for quantified effects that are not monetized utilize metrics that allow comparisons and tradeoffs to be made evident; (Emphasis added)

A thorough evaluation of alternatives would reveal costs and benefits extending to many of the areas included in this analysis, including impacts to the environment, commercial fishing, recreation, labor markets, greenhouse gas emissions, seismic risk and water supply. Simply put, without an analysis of alternatives, this evaluation cannot reveal the trade-offs implicit in any BDCP alternative, nor can it design the most cost-effective project.

Anticipated water supply benefits should reflect the best currently available science. BDCP is considering the adoption of a “decision tree” approach to determining final project operations. BDCP has yet to release a detailed proposal for the decision tree. However, it appears that this approach would delay a final decision on project operations until well after permit issuance. We will not address the merits of such an approach here, other than to note that the anticipated BDCP water supply benefits included in this analysis must reflect the best science available today. This analysis cannot rely on speculative future scientific conclusions. Fortunately, state and federal fisheries agencies have developed a beginning point for this evaluation, in the operations scenario entitled “Combined Scenario 5, Revision C, uncapped.” NRDC does not endorse these proposed operations as adequate final requirements, but they do represent a credible starting point for BDCP’s scientific and economic analysis.

The analysis should not include regulatory assurances. The task order states (page 2) that “(t)he Brattle Group will summarize its previous DWR-sponsored research on the benefits of improved water supply reliability resulting from the BDCP.” In a previous presentation to the Finance Working Group, Dr. Sunding, with the Brattle Group, presented an initial analysis of the benefits to water users of regulatory assurances. However, state and federal agencies have clearly indicated that such regulatory assurances will not be part of the final BDCP plan. Therefore, we request that BDCP amend the Task Order to clarify that this analysis should exclude any analysis of regulatory assurances.

The analysis of the benefits of seismic risk reduction should incorporate the probability of a large-scale Delta levee failure. The analysis appropriately includes the value of avoiding a possible earthquake-driven temporary shut-down of the CVP and SWP pumps in the South Delta. However, it is not clear from the brief presentation if the analysis will adjust the anticipated benefits to reflect the fact that a Delta levee failure is not a certainty. If, as scientists with the University of California have concluded, a large scale Delta levee failure has a 2/3

probability by 2050³, then the water supply benefits of avoiding a Delta failure must be adjusted to reflect this likelihood.

The analysis of the benefits of seismic risk reduction must reflect anticipated project operations. The analysis of the risk reduction benefit for Delta water supplies appears to assume that, in the case of a Delta levee failure, 100 percent of pre-failure exports would be pumped through a new North Delta facility. However, BDCP's modeling suggests that, on average, 50% of total exports would take place in the South Delta. In dry years, when concern about a levee failure is greatest, this percentage rises to 75 percent. Thus, with this anticipated analysis, even with a large Delta facility, a levee failure could lead to the loss of 50 to 75 percent of Delta exports. Alternatively, if BDCP anticipates relaxing environmental constraints, in the event of a levee failure, the environmental impacts of this proposed operations scenario should be evaluated carefully in the EIR/EIS. Given the potential for investments in levee improvements to reduce the risk of levee failure, a careful analysis of the anticipated reliability benefits of a new Delta facility may reveal larger potential benefits from the investment in levees included in the portfolio-based alternative.

The no action alternative should be carefully developed to avoid bias. The January Finance Working Group meeting included a discussion of the No Action Alternative. We recommend that the No Action Alternative reflect the approach that should be included in the EIR/EIS – current regulatory requirements, with anticipated climate change impacts. We grant that is likely that the State Board will set new outflow standards, with or without BDCP, during the coming several decades. It is possible that these new standards would be similar or identical under either the project or no action alternatives. It is also possible that other regulatory requirements will be imposed upstream of the Delta during the coming 50 years. All of these potential future requirements could affect Delta project operations. However, at this time, these future regulatory decisions are highly speculative. We are struck, however, with the implication of a No Action Alternative that assumes significantly stronger flow standards. Specifically, such an alternative suggests that DWR considers such stronger flow and pumping requirements to be necessary and inevitable under current conditions. To date, DWR has not supported such stronger SWRCB requirements.

The effort should include a sensitivity analysis to reflect the relative confidence in cost estimates for different program elements. The cost estimates for some elements in the portfolio-based alternative are based on a great deal of experience. For example, the costs of levee improvements, water conservation and water recycling projects are well established by a wide range of projects over several decades. On the other hand, the cost of a large Delta facility is significantly less certain. Facility construction cost estimates have risen significantly during the BDCP planning process. This project is still at a relatively early stage, in terms of engineering and cost estimates. In addition, this is a nearly unprecedented project, which is likely to face unexpected design, construction and permitting obstacles. Finally, large-scale infrastructure and water supply projects have a long record of significant cost overruns. As a result, we recommend that this effort include an analysis of the likely accuracy of cost estimates

³Available at <http://www.escholarship.org/uc/item/4k44725p>

for different program elements. For those with costs that are less well established, the analysis should include a sensitivity analysis, evaluating the costs and benefits in the case of possible cost overruns.

The analysis should account for ecosystem costs and benefits. We do not support an effort to assign a simple monetary value to the protection and recovery of endangered species. The survival of a species is inherently difficult to assign a dollar value to. However, there are other ways to evaluate the costs and benefits of alternative approaches from an ecosystem perspective. The current methodology already includes a non-market evaluation of public support for Delta ecosystem protection. However, as indicated below, the analysis should clearly link these anticipated ecosystem benefits to specific program elements. The analysis should also be based on the best available science, to ensure the reliability of anticipated ecosystem benefits. In addition, all alternatives should be constructed to meet minimum legal standards.

Finally, the analysis should assign non monetary value to those alternatives that provide superior environmental results, particularly for covered species. This approach is consistent with the federal Principles and Guidelines, which, as quoted above, offer the following guidance: “(t)o the extent practicable, quantify benefits and costs and express them in monetary terms and for quantified effects that are not monetized utilize metrics that allow comparisons and tradeoffs to be made evident” (emphasis added.)

The analysis should distinguish among the benefits for different water users. As a result of several factors, not all South of Delta water users would benefit in identical ways from the BDCP. For example, the Friant Unit water users largely do not receive Delta water. The exchange contractors have senior water rights. And Kern County farmers have access to extensive groundwater resources. The analysis of water supply reliability benefits should determine the potential benefits of BDCP for different groups of water users and present those results in a disaggregated manner. This approach will assist BDCP in developing a BDCP finance plan in collaboration with stakeholders.

Where possible, the analysis should analyze project components separately. We support a portfolio-based approach to the BDCP, which would include multiple investments in a final plan. In order to inform the development of this portfolio, the cost-benefit analysis should analyze separately the costs and benefits of different potential program elements. For example, potential ecosystem benefits should be clearly identified as the result of project operations or habitat restoration. Likewise, potential reliability benefits of a Delta facility, water recycling, conservation and levee improvements should be analyzed separately.

BDCP should update construction costs to determine if the use of a discount rate is appropriate. The methodology proposes to apply a discount rate to the cost of future construction, in order to calculate the net present value of those costs. Updated construction cost numbers are not currently available from BDCP. As updated cost numbers are developed and incorporated into this cost-benefit analysis, BDCP should clearly indicate if those construction costs are calculated in current or future dollars. If these construction costs reflect current, rather

than likely future costs, then the use of a discount rate would be inappropriate, as rising costs would lead to higher total construction costs in the future.

The analysis should include a sensitivity analysis regarding the discount rate. In January 2008, DWR issued its guidelines regarding economic analyses, with a recommended a discount rate, at that time, of 6%. Current interest rates are lower than they were in 2008. However, it is unlikely that all of the funds to finance BDCP construction would be borrowed at today's historically low interest rates. Given the planning horizon for BDCP and the difficulty of forecasting future interest rates, we recommend that the analysis include a sensitivity analysis regarding discount rates, ranging from 5 to 7 percent.

In closing, we urge you to use the Finance Working Group extensively to ensure that the cost-benefit analysis produces the most useful possible results.

Thank you for considering our comments. We look forward to continuing to work with you to ensure the success of this effort and of the BDCP.

Sincerely,



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